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MEMORANDUM

TO:	Jared Bond, David J. Powers & Assoc.	DATE:	January 25, 2016
FROM:	Sarah Rahimi, PE	JOB#:	DPOW.82.15
SUBJECT:	North San Jose Floodplain Management Policy Criteria for Orchard Parkway Development		

Introduction

This memorandum documents that conceptual grading plans for the Orchard Parkway site meet applicable provisions of the City of San Jose's North San Jose Floodplain Management Policy. The Orchard Parkway Development will contain two new buildings, which includes one office and one manufacturing building. The new buildings will result in a 63,000 square foot, 2-story office building and a 38,171 square foot, 1-story manufacturing building on a 233,637 square foot lot.

As shown in Figure 1, the Orchard Parkway Development site is generally bounded by Orchard Parkway to the (plan) east, an existing manufacturing development to the south, the Guadalupe River Trail to the west, and an existing office building development to the north. Flood flows are generally from the south to the north following a path parallel to Orchard Parkway and the Guadalupe River Trail, which bounds the eastern and western edge of the Orchard Parkway Site. Flow flows are therefore perpendicular to Plumeria Drive, which generally bounds the northern edge of the site.

Figure 1. Project Site Location

North San Jose Floodplain Management Policies

The City of San Jose has established policies that govern development within north San Jose as related to flood hazard mitigation and impact avoidance. The objective of the City is to provide consistent policies throughout the area to allow increased development density, protect new structures from flooding, minimize potential increases in flood depths, and ensure consistency with FEMA requirements and the City's floodplain management ordinance. The following policies described in the City's September 2006 *Floodplain Management Study Update* apply:

1. Finished floors for new development shall be at or above the established 100-year water surface elevation.
2. New development shall include onsite conveyance areas to allow shallow flooding to cross the site. Onsite blockage for buildings and other development shall be restricted to include onsite conveyance.
3. Onsite flood conveyance will be at the approximate elevation of the street sidewalk at the site.
4. Onsite flood blockage restrictions are established based on a percentage of the site width perpendicular to the direction of flood flow across the site (generally in an east-west direction, or perpendicular to North First Street).

Finished Floor Elevations

As shown on the attached Figure 2, the regulatory base flood (100-year) elevation is 21 feet NAVD at the Orchard Parkway Development site. This is consistent with the effective Flood Insurance Rate Map, which shows parts of the site subject to shallow flooding (Zone AO 1 foot deep and Zone AH Elevation 21 feet). Conceptual grading plans provided by Keir & Wright for the site are based on a site survey performed on a vertical datum of NAVD 88 as is the FIRM.

Conceptual grading plans show both building finish floor elevations at 22.5 feet NAVD. These elevations meet the North San Jose Floodplain Management Policy requirement and meet City of San Jose Floodplain Ordinance requirements for the elevation of structures within a special flood hazard zone. We have confirmed that the lowest adjacent grade is above the BFE. This meets NFIP criteria for removal from the flood zone.

Onsite Flood Blockage

Figure 2 shows that the maximum onsite blockage allowed at the Orchard Parkway site is 75 percent. Blockage is defined as any area on a site with an elevation that is higher than the approximate elevation of the back edge of the street sidewalk surrounding the site. In this case, the existing adjacent development to the north is higher than the project site itself, with elevations of approximately 23 feet NAVD. Onsite conveyance of shallow flooding must be maintained to an amount of at least 25 percent of the site width perpendicular to the direction of flood flow across the site. At least 25 percent of the site width in any given cross section must be at the same elevation or lower than the adjacent sidewalk and thus essentially maintaining existing topography.

The site should also be graded to allow shallow flooding to cross the site. According to the site grading plans, shallow flows release to Orchard Parkway in the northeast corner of the site.

A conceptual building layout and grading plan furnished by Keir & Wright shows that shallow onsite flow conveyance will be provided through the parking lots adjacent to Orchard Parkway on the east and the Guadalupe River Trail on the west. Flood waters flow across the site from south to north. In general, the blocked areas for the development include the two buildings, which cover 101,171 square feet of the 233,637 square feet site area. The two most restricted cross sections are located at each building respectively as shown on the attached Figure 3. The percent blockage is calculated in Table 1 as the length of cross section blocked by obstructions, divided by the total length of cross section within the Orchard Parkway Development site boundary. These cross sections generally span the site from Orchard Parkway to the Guadalupe River Trail.

Table 1: Cross Section Blockage Calculations

Cross Section	Location	Total Length (ft)	Blocked Length (ft)	Percent Blocked
1	1-Story Building (Manufacture)	525.0	294.6	56.1%
2	2-Story Building (Office)	511.5	259.5	50.7%

At the most critical cross section locations at the manufacturing building, 56 percent of the site is blocked and at the office building, 50.7 percent of the site is blocked. This meets the maximum applicable site blockage criterion of 75 percent.

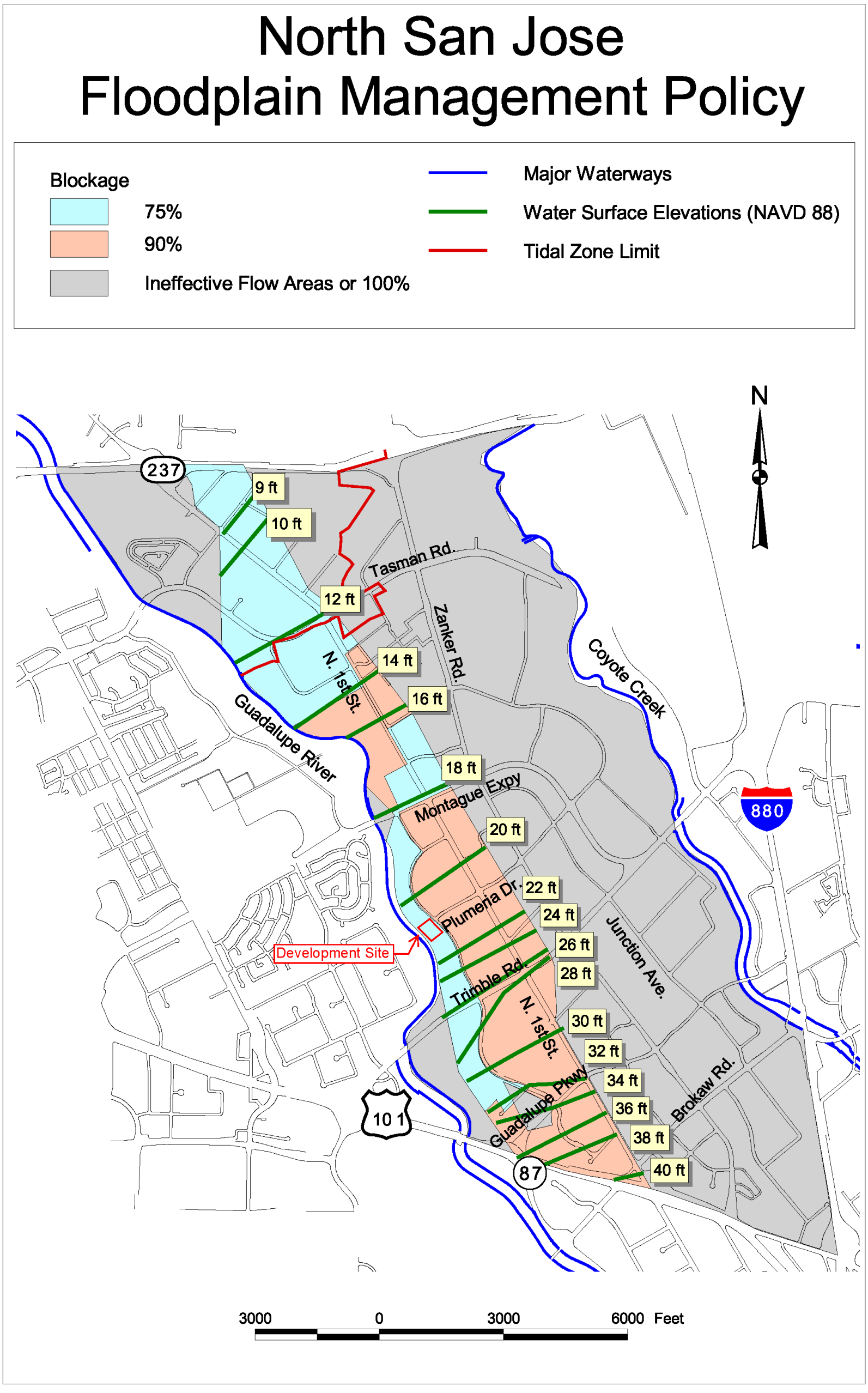

Figure 2. North San Jose Floodplain Management Policy

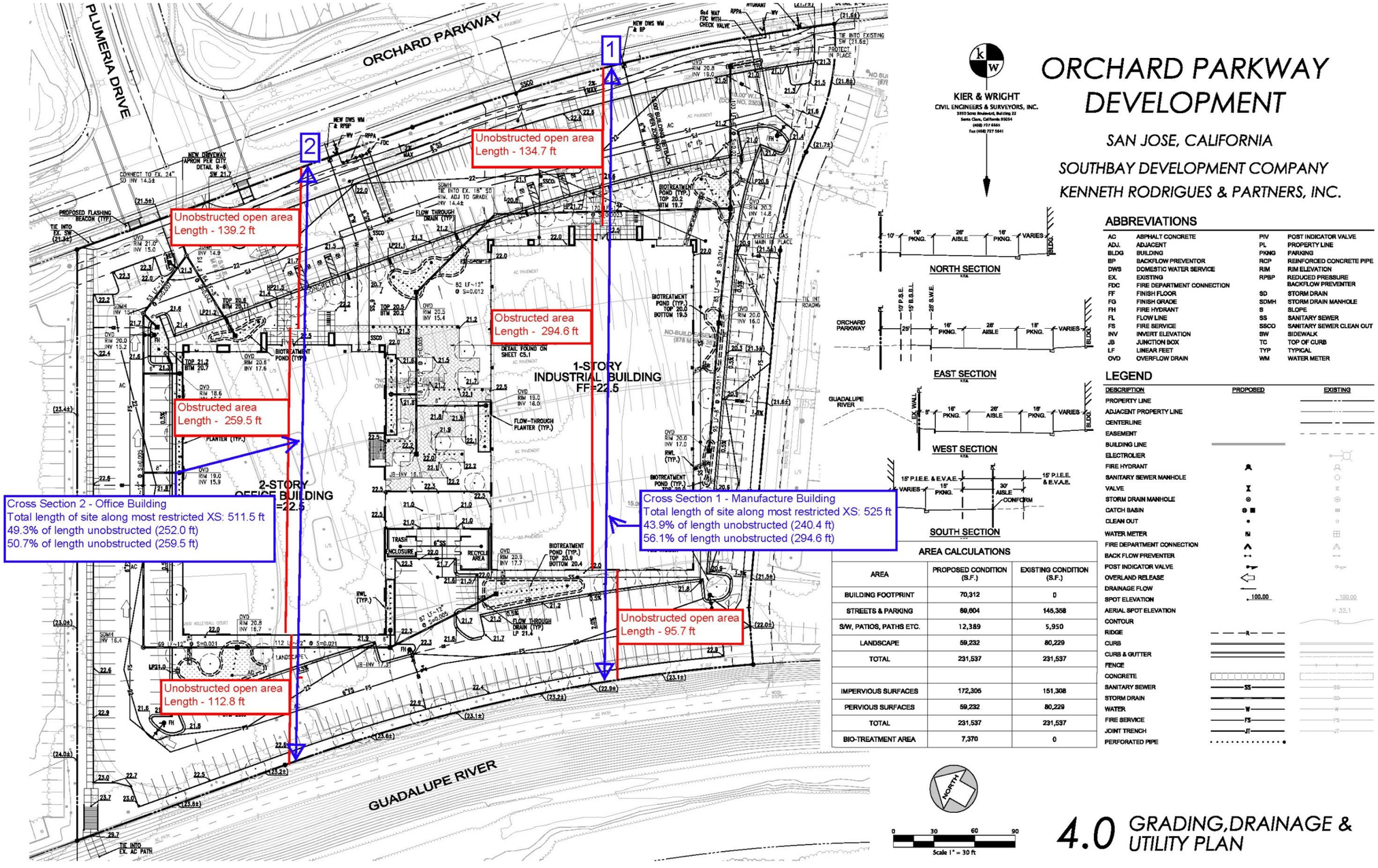

Figure 3. Development Site Shown With Blockage Analysis